DOCUMENT RESUME

ED 045 318 RE 003 163

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TITLE DISTAR Reading--Research and Experiment.
INSTITUTION Illinois Univ., Urbana.
PUB DATE Sep 70
NOTE 54p.

EDRS PRICE EDRS Price MF-$0.25 HC-$2.80
DESCRIPTORS Ability Grouping, *Beginning Reading, *Culturally Disadvantaged, *Grade 1, Kindergarten Children, Reading Achievement, *Reading Programs, Reading Readiness, *Reading Research
IDENTIFIERS DISTAR Reading Program

ABSTRACT

Current research dealing with the importance of reading, various beginning reading programs, and reading and the disadvantaged child was surveyed. This was followed by an explanation of the DISTAR Reading Program, which was designed to teach reading to disadvantaged children. The remainder of the report described a study which was conducted to substantiate the hypothesis that children who are taught by the DISTAR approach will become successful readers. In this study, 89 first-grade children were placed in four classes and separated by each teacher into three ability groupings. Class 1 received instruction only in the DISTAR Reading Program; two classes received instruction in Phonetic Keys to Reading, and the fourth class was used to match "pair-wise" each child in Class 2 on certain characteristics. Pretests and post-tests were administered to the first three classes. Examination of the obtained data indicated that all ability groups using the DISTAR approach profited from the instruction. The DISTAR group, when compared to the other groups, showed greater reading achievement. The study was chiefly significant in regard to the achievement of the low ability group, who might have been expected to fail in first grade. Tables and a bibliography are included. (DH)

ED045318

DISTAR READING--RESEARCH AND EXPERIMENT

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RE003 163

TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION	1
II.	SURVEY OF CURRENT RESEARCH IN EARLY READING	2
III.	SAMPLE	17
IV.	METHODOLOGY	22
V.	HYPOTHESES	24
VI.	RESULTS	26
VII.	DISCUSSION	36
FOOTNOTES		47
BIBLIOGRAPHY		49

I. INTRODUCTION

This paper reviews the research related to early reading, particularly first-grade reading and suggests a program which will enable children of all abilities to learn to read.

The first part of the paper examines the current research dealing with: the importance of reading, various programs of reading, reading and the disadvantaged child and an explanation of the DISTAR Reading Program including supportive research.

The next part of the paper discusses the sample used for the experiment which is a part of this study. Other parts of this paper include a section on the hypotheses and their results. The empirical data substantiates the hypotheses that the DISTAR Reading Program will enable all children using it to become successful readers.

Finally, this author discusses her commitment to the DISTAR Reading Program, the reasons for its success, the implication for kindergarten teachers, the need of in-service training, the importance of small classes and future needs and recommendations.

II. SURVEY OF CURRENT RESEARCH IN EARLY READING

A review of the literature, studies, and theories related to teaching reading to first graders has given many helpful insights into the problems which face the classroom teacher.

Dr. Edgar Dale of Ohio State University has this to say:

> "Reading is a many splendored thing. It involves careful, critical analysis and synthesis; it is swift for scanning. Reading can do some things much better than any other media, such as T.V., radio, photography. Reading is the most effective way to interconnect, inter-relate, integrate and evaluate all our learning. Reading helps us record and re-arrange symbolically our mentally filed experiences."[1]

Dale goes on to state that our progress has been uneven and grossly inadequate. We should acknowledge that learning to communicate is just as important as putting a man on the moon or the anti-ballistic missile system. He foresees a rough future, but an exciting one.

James E. Allen, Jr., former U. S. Commissioner of Education notes that "there is no higher nationwide priority in the field of education than the provision of the right to read for all . . ."[2] His goal for the 1970s: "No child will leave school without knowing how to read."[3]

President Nixon's message to Congress on educational reform stresses the urgent need for increased research into the

problems of poor children in public schools. He asked for a national institute of education to pursue research and development.

A. Sterl Artley says that "Society may raise only an eyebrow for one's inadequacies in spelling, math, or the ability to speak a foreign language; but, in one way or another, it castigates an individual who cannot read or read effectively."[4]

Sidney J. Rauch (1967), Victor M. Rental (1967), and Nicholas P. Criscuolo (1968), discuss the necessity and desirability of <u>total</u> faculty and administrative involvement in programs dedicated to improvement in reading. Rauch and Criscuolo also stress the necessity of an in-service training program. Dorothy M. Dietrich (1969) reports that some instructional programs may provide readiness for some but not be effective for others because of the abilities (or disabilities) the children bring to the classroom. The challenge is directed to classroom teachers, reading specialists, administrators, researchers. college teachers of reading for teacher training and the State Departments of Education.

Harold Howe, II (1966) reaffirms a view held by this author that "Schools and educators must take the leadership in the school desegregation process. Segregated classrooms perpetuate in the negro child a feeling of second class citizenship, which is both unfair and illegal."[5] I would make the addition that in the classroom something must be done to really help these children learn--where methods suited to their

needs are used. As Dr. J. McVicker Hunt in his book The Challenge of Incompetence and Poverty states: "Until something is done to change the traditional use of the lockstep and the competition in our schools, merely putting those culturally deprived, be they black or white, together with those culturally privileged, can only make matters worse for those deprived."[6]

Alexander Frazier (1970) asks how reading will be taught in the coming decade, and feels that what will be taught will depend on the values society imposes on the school system, demanding mastery and growth. "The new demand for mastery is a demand from the total society--and our new, exacting society won't take 'no' for an answer. Either we get on the ball and teach children basic skills and content . . . or other agencies will be called in to do the job for us."[7]

Arthus I. Gates (1969) would like to see education make more use of the products of technology, teaching machines, programmed and practice material, and other teaching aids. Teachers and administrators should be willing to experiment with materials and techniques in a continuing search for improving classroom teaching of reading.

In looking into various studies and comparisons of existing reading programs, such as basal series and individualized reading approaches, the following information emerges. One study conducted in 1968 by Ralph Staiger surveys the development of the basal reader from its beginnings in the late 1700s to its status in the grade schools of today, with the

McGuffey Reader cited as the first carefully graded series of one reader for each grade. Since then, many changes in the basal series have been made, but the most telling criticism of them remains--the lack of incorporation of the research findings into their methodology. Homer Hoyt (1966) reports a study of four different approaches to beginning reading including the basic reading program, self-selection in reading, language-experience approach, and programmed instruction. Robert B. Hayes and Richard Wuest (1968) report on four approaches to beginning reading which included Scott-Foresman and Co., a phonics program correlated with filmstrips (Lippincott), a combination of Scott Foresman and phonics booklets, and a language arts approach using ITA and Merrill. Independent reading was encouraged in all groups. In general, the conclusion was that the Lippincott combination was worthy of further study and use, but no one approach was consistently better than the others.

Marion Potts and Carl Savino (1968) studied a random sampling of 150 first graders to determine progress under three different reading programs. Two were based on the teaching of sound-symbol relationship, the other emphasized whole word reading first. Data was analyzed and significant differences (1% level) were found. The program which used the most intensive phonics training proved to be the most effective; the second most effective was also based on the sound-symbol relationship.

Robert Dykstra (1968) reports on 27 projects with 20,000 first graders. He concludes that instruction in phonics is related to achievement in word recognition and spelling, and that a writing component is an effective addition to a primary reading program.

A look at reading series and techniques would not be complete without a look at the computer-based instruction and other individualized reading programs. Sherman H. Frey (1965) notes, "Programmed instruction is not receiving the widespread acceptance its proponents would like to see . . . materials now available are limited in scope of the mental activity required."[8] Later studies reveal that improvements have been made and some of the objections to it have been overcome. There are advantages to an individualized reading program which include:

1. A widely varied selection of material
2. Instruction at the child's interest rate and skill level
3. Use of time
4. Appeal of individual conference
5. Favorable attitude to reading.

Among the disadvantages are:

1. The large number of books needed
2. Student difficulty in self-selection
3. Lack of opportunity for readiness
4. Vocabulary, concepts and skills not systematically presented or repeated
5. Teacher must be highly competent in identifying skills and managing time
6. Some children need more structure and experience in group interaction
7. The danger of not reading in different types of books to broaden literary interest.

Although individualized instruction may have some advantages we need to look carefully at the disadvantages.

Harold L. Herber (1967), Carl B. Smith (1969), and Ruth Strickland (1969) state that it is impossible to meet needs of all children by any one method of instruction, and that the most important element in the reading program is the teacher. This again heralds the need for in-service training. Albert J. Harris (1969) agrees that the teacher is more important than the instructional technique and further states that the skills-centered approach is superior to the language-experience approach on reading tests and in spelling. Benjamin Soloman (1966) sees that low-level teacher expectations need change, and the Samuel Weintraub (1969) research indicates that "a powerful but subtle force influencing our actions is the behavior expected of us."[9] R. Rosenthal (1966) presented evidence to suggest that the experimenter often influenced his subjects to respond in an expected manner. A mounting body of evidence leads to the conclusion that there are fine, unconscious differences in the way we behave toward individuals that are dependent upon how we perceive them.

Programs (none of which seem to be better than any other) and reports indicating the importance of the teacher still leaves us with the problem of teaching reading to the child with special needs (referred to in much of the research as the disadvantaged child).

Since the inability to deal with failure is generally accepted as a characteristic of the disadvantaged child, it follows that to instill a positive self-concept means forestalling any possible experience of failure. One way to achieve

this in the teaching of reading would be structuring the whole reading process as a sequence of well-defined learning stages through which the child would proceed at his own rate.

Ernest Melby in 1967 speaking on education and the disadvantaged argues that if the schools are to meet the needs of a changing society, and if disadvantaged children are to learn effectively, the objectives and practices of the current educational system must be modified. Innovative curricula and materials developed independently of the children for whom they are ostensibly created should give way to scientific considerations of the unique developmental, interpersonal, and environmental factors which influence the actual learning process. He further urges that we stop ignoring the huge body of research on the learning process which we now possess.

S. Alan Cohen (1966) reached some conclusions about teaching reading to the disadvantaged child. Word attack skills including phonics, should be part of the instruction in remedial reading programs. Further, that children tend to be visual rather than auditory; they should be given linguistic-phonic instruction in early beginning reading programs . . . . Teachers do not know about new and appropriate materials, and methods for teaching these children is another of his findings.

Dina Feitelson (1968) discusses teaching reading to culturally disadvantaged children and makes these points in her report: Cognitive unprepardness indicates a need for the teacher to make certain that symbols are introduced slowly and sequentially, accompanied by sufficient exercises to enable

the child to absorb them. This is an illustration of a principle proposed by P. O. Ausubel (1963) that learning is facilitated by use of sequentially organized structured material.

Martin Deutsch as far back as 1963, speaks of the lower-class child who comes to school with so few of the skills necessary to meet school demands that his initial failure is almost inevitable--that school experience becomes negatively rather than positively reinforced.

Joan Baratz notes, "The low income, urban Negro child is failing in our schools. His inability to read is a major challenge to contemporary education because of its relationship to the child's self esteem and his ultimate social effectiveness."[10] Baratz further feels that well-intentioned school systems are not enough, and that despite the enormous expenditure of energy in the remedial reading programs, children in the ghetto are still not learning to read.

THE DISTAR APPROACH

One of the problems of teaching reading to children with low mental ages (for example, of four to five) is that most reading programs are geared to the children with a mental age of six and one-half. A child with this higher mental development will often have many of the basic reading skills already accomplished or he can learn them quickly and without the benefit of the most effective instrument. A child with a low mental age might struggle to learn to read under such a program for an inordinate amount of time. Retarded, handicapped

and deprived children must generally be instructed in the most basic reading skills. They must be shown that each letter represents a sound. They must then be taught that these sounds are sequenced in a word in time. Also they must learn that the reading code represents the passage of time through a left-to-right progression of symbols. Blending is another skill which is taught. Rhyming and alliteration tasks are useful in teaching blending skills in developing this sound-sequence skill. Continuous sound words like "fan" and "ran" should be introduced before stop sound words like "cat" and "rat". Words whose pronunciation does not fit the fundamental sound-sequence approach for example "have" in which the "e" is not pronounced and "she" which contains a double letter sound are called irregular words and are introduced later.

It is my feeling that a program which would not only serve the needs of the disadvantaged, but also would allow all children in the classroom to proceed at their proper rate of speed would be the most appropriate to use. Such a program is now available for use in the classroom. It is called DISTAR, published by Science Research Associates (1969, 1970), DISTAR Reading is a two-year program for preschool and kindergarten, kindergarten and first-grade, or first-grade and second-grade.

The DISTAR Reading Program is a code-cracking program. Children usually fail to read because they can't take the first step--they can't crack the code. They can't look at a word as a series of sounds and put the sounds together to form a word. This makes the first two years of reading instruction

the most crucial; it is during these years the child must be taught basic code-cracking skills. DISTAR is designed to teach culturally disadvantaged and below average children the skills they must have in order to read, and it is designed to teach them quickly, so that these children can proceed in reading instruction nearly as rapidly as the more able child. It provides exercises that the average learner does not need--exercises in sequencing events, saying words slowly, rhyming, blending, and sound sliding. The program deals with all essential skills in such a way that children receive as much drill as they need in each skill area, insuring their performance as adequate for the more sophisticated reading tasks to come.

The Bereiter-Engelmann (B-E) Pre-School Program which includes language, reading, and arithmetic, was used in Grand Rapids, Michigan. The evaluation compared the Bereiter-Engelmann Program with an enrichment program stressing group orientation, field trips, and a control group. In a report prepared for the Office of Economic Opportunity in Washington, D.C., Dr. Esdel Erickson of Western Michigan University and principal investigator of the evaluation, discussed the findings. Children in all groups seemed to profit from the B-E kindergarten program. Those from the control pool scored slightly above age level and about equal to those who came out of the enrichment pre-school. But, again, children who came out of both the B-E pre-school and B-E kindergarten programs tended to score about one year above age level. Other findings

were: (1) Children from the B-E pre-school achieved about the same high level in both regular and B-E kindergarten programs. (2) Children from the enrichment pre-school who went into regular kindergarten scored significantly lower than those who went into the B-E kindergarten. The important point here is that poor, inner-city children who were in the B-E pre-school and who then went into either the B-E kindergarten or the regular kindergarten program showed no drop in intelligence. Generally, disadvantaged, inner-city children who were students in the Bereiter-Engelmann Program, maintained I.Q. averages about one year above the general population norm during a two-year study (Stanford-Binet).

The best results are achieved by a "code-emphasis" approach which focuses upon the child's attention on a printed word, rather than on a "meaning emphasis" approach which focuses the child's attention upon story content and pictures. The Carnegie Corporation study headed by Jeanne Chall, Harvard University professor of education conducted a significant reading research. The report, based on a study of sixty-seven research studies, visits to 300 classrooms, and interviews with 500 teachers and school administrators, has been published in book form, Learning to Read: The Great Debate.

Some of the major points made by the study are: Teachers invariably make adjustments in methods to suit their own style of teaching, making pure experiments difficult to report. The experimental research provides no evidence that either a "code" or a "meaning emphasis" fosters greater love of reading

or is more interesting to children, nor that one "code emphasis" produced commercially is better than any other. There is some experimental evidence that children of below-average and average intelligence and children of lower socio-economic background do better with an early "code emphasis". Brighter children and those from middle and high socio-economic backgrounds may also gain from such an approach, but probably not as much. Intelligence, help at home, and greater facility with language, probably allow these children to discover much of the code on their own, even if they follow a "meaning approach" at school. The correlational studies support the experimental finding that an initial "code-emphasis" produces better readers and spellers. They show a significant relationship between ability to recognize letters and give the sounds they represent, and reading achievement. Although knowledge of letters and their sound values does not assure success in reading, it does appear to be a necessary condition for success. In fact, it seems to be more essential for success in the early stages of reading than high intelligence and good oral language ability.

The report continues with more findings which are relevant to this paper: The remedial treatments described all concentrated on teaching the pupil to de-code the printed word, and help eventually to read with speed, comprehension, and appreciation. In short, the clinical reports analyzed give reason to believe that a stronger code-emphasis would help prevent reading failure, although never eliminate it entirely.

(There is sufficient evidence to show that such failure stems also from the personal characteristics of the learner.) In the section on interest in reading, the report concludes that children can become interested in anything. "A hazard of the conventional basal-reading programs shared by Phonetic Keys to Reading, one of the supplemental phonics programs, was the persistent questioning to which the children were subjected on all aspects of meaning and interpretation of rather simple stories. Even for children of average intelligence, such detailed questioning to insure that they were reading for meaning appeared unnecessary and tiring. True, not all stories were interesting. But the main reason for the yawns and listlestness was the 'wringing the story dry' through questioning. The teachers were following the suggestions in the manual."[11] Chall further states, "Good teaching is always needed, but a good method in the hands of a good teacher--that is ideal."[12] I agree. I also agree that good teachers are constantly searching for good methods. Reference to research which supports learning to read at an early age was reported using studies conducted by C. C. Fries (1962), L. Bloomfield (1961), Wm. Fowler (1962), Dolores Durkin (1964), and Carl Bereiter and Siegfried Engelmann (1966) as a basis for the view expressed.

The summary statement from Richard Venesky, R. C. Calfee and R. S. Chapman (1969) states, "Improvements in the teaching of reading must be derived from an understanding of task-skills, oral language skills, and from de-coding skills used in learning to read."[13]

Evan Keisler and John McNeil (1968) support the hypothesis that the oral method of teaching reading is significantly superior to the non-oral method. DISTAR Reading Program sometimes referred to as direct instruction method is definitely an oral approach.

S. Jay Samuels (1967) in a study entitled "Attentional Processes in Reading--The Effect of Pictures on the Acquisition of Reading Responses" hypothesis that when words and pictures are used together the pictures may miscue and divert attention, thereby interfering with the acquisition of reading responses. Results showed the "no-picture group" excelled in testing trials and further that poor readers with no pictures present learned more words. DISTAR Reading Program uses pictures at the end of the story as a type of reward, but not during the lessons. This avoids dependence upon pictures for clues.

Another report which supports a basic tenet in the DISTAR Reading Program is R. J. Karraker (1968) "Teaching Beginning Readers to Distinquish Between Similiar Letters of the Alphabet". The research on the discrimination process indicates that errorless learning can occur if stimuli are carefully programmed so that they are dissimilar and gradually become more similar as training proceeds. (A specific example; lower case b and d, with kindergarteners was one of the facets of the experiment.)

Elaine Bruner (1967) in a paper presented at McGill University in Canada has this to report: "Until substantial mastery has been achieved by the slow reader, the sub-skills

to learning the mechanics of reading should be made the objectives of instruction."[14] Focusing on words, blending, and handling irregulars, are three of the sub-skills needed. To teach the child to focus on words the teacher introduces verbal rhyming and alliteration tasks. The five major blending stages are:

1. Oral; the child blends together two parts of a familiar word
2. Oral-visual; the child blends the letters in written words before he can identify all the letters in these words
3. Visual; the child identifies and blends all the letters in written words
4. Oral; the child unblends (spells) a word into its separate letters
5. Visual; the child learns the written extension of oral spelling.

The final step in the beginning reading program is the introduction of irregularly spelled words. Bruner reported good results with a group of culturally-deprived four-year-olds tested at 2.6 grade level in reading after about 100 hours of instruction. Bruner is one of the authors of the DISTAR Reading Program.

III. SAMPLE

The sample selected for this study was comprised of a total of sixty-six children enrolled in the first grade classes of the Champaign, Illinois (Unit 4) School District plus twenty-three children in the randomly selected "class". This total sample was divided into four classes for the purpose of this study. All groups were heterogeneous.

CLASS I

Class I consisted of twenty-four first-grade students. Of these nine were boys and fifteen girls. Four of the students were black and twenty were white. At the beginning of the study, the children's ages ranged from five years ten months to seven years, two months. Various socio-economic backgrounds were represented in this class.

Class I had some experience with the DISTAR materials before this study was started. I taught the program in kindergarten beginning in the fall of 1968. Small group instruction of twenty to thirty minutes daily was given to the kindergarten classes. Part of the class started with DISTAR Language Program and moved into the DISTAR Reading Program in the second semester. Another part of the class started the reading program in September and continued it throughout the year.

At the end of the 1968-1969 school year I obtained permission to continue teaching these children in first grade. Some of the children moved out of town, some transferred to their parochial school, but of the original thirty-six kindergarten children, twenty-two remained and were promoted to first-grade. Two additional students were added in September. The class size for general instruction was twenty-six to twenty-seven children. However, data was complete for only the experimental group of twenty-four. (One child was absent for the final testing.)

All of the children in Class I received instruction in reading, using only the DISTAR Reading Program. No other reading programs or forms of instruction were used to teach Class I until Part II of the DISTAR Reading Program was completed. Library books were present in the classroom. The teacher had more than ten years of kindergarten teaching experience, but no previous first-grade teaching experience.

CLASS II

Class II consisted of twenty first-grade children. Of these twelve were boys and eight girls. Four of the children were black, and sixteen white. At the beginning of the study the children's ages ranged from five years nine months to six years nine months. A varied socio-economic background was represented in this class. For purposes of general instruction the size of this class varied from twenty-five to

twenty-seven, but for the purposes of this study, complete data was available only on twenty children.

All the children in Class II received instruction in Phonetic Keys to Reading (PKR) as their basic instructional method. The teacher of Class II also used any other techniques and/or series for additional instruction and enrichment as she saw fit. There was additional help given to four children in Class II. This help was given by Learning Disabilities, or Developmental. Teachers who used the DISTAR Reading Program. The classroom teacher had over twenty years of first-grade teaching experience. No screening of children was done for this class.

CLASS III

Class III consisted of twenty-one first grade children. Of these ten were boys and eleven girls. Four of the students were black and seventeen white. At the beginning of this study the children's ages ranged from five years nine months to seven years. Various socio-economic backgrounds were represented in this class. For the purposes of general instruction the size of the class varied from twenty-five to twenty-seven children, but for the purpose of this study, complete data was available on twenty-one children.

All the children in Class III received instruction in Phonetic Keys to Reading (PKR) as their basic instructional method. The teacher of Class III also used any other techniques and/or series for additional instructional and enrichment as

she saw fit. There was additional help given to six children in Class III. This help was given by the Developmental Teacher who used the DISTAR Reading Program. The classroom teacher had one and one-half years of teaching experience. No screening was done on this class.

Classes II and III were included in this study to increase the total sample size and as a means of comparing the DISTAR Reading Program to a PKR Program. Both Classes II and III used PKR, but were taught by two different teachers in two different locations, each using her own teaching strategies.

CLASS IV

Class IV consisted of twenty-three children selected to match "pair-wise" each of twenty-three children in Class II on the following characteristics: socio-economic background, sex, race, I.Q. (variation of only plus or minus one point) and age (to the exact month). This class was selected for maximum match from first-grade class lists in the school district, using the records of first-grade children from the school year 1967-1968.

GROUPS

In each of the Classes I, II, and III there were three groups (high, middle, and low). These groups were determined by each teacher. Her opinion of the children's general reading ability determined their group placement.

NUMBER OF PARTICIPANTS IN
EACH CLASS BY GROUPS

	high	middle	low
Class I	4	10	10
Class II	6	8	6
Class III	6	5	10

The study involving "Class" IV was not done on a group basis.

IV. METHODOLOGY

The Wide Range Achievement Test (WRAT) was given only to Classes I, II, and III in October as a pre-test.

The following January, 1970, the high-ability reading group of Class I (DISTAR) completed Part II and the DISTAR Reading Program. After this all high-ability reading groups of Classes I, II, and III were tested with the WRAT as a post-test.

In April, 1970, the middle-ability reading group of Class I (DISTAR) completed Part II of the DISTAR Reading Program. After this all middle-ability reading groups of Classes I, II, and III were tested with the WRAT as a post-test.

By June, 1970, the low-ability reading group of Class I (DISTAR) had completed only 300 of the 340 lessons of Part II of the DISTAR Reading Program. Since it was the end of the academic year, all low-ability reading groups of Classes I, II, and III were tested with the WRAT as a post-test.

In order to compare Classes I, II, and III and also to compare Class I and IV and to obtain additional measures of ability and achievement, it was necessary to use tests that have been administered traditionally. The California Test of Mental Maturity (CTMM) and The Metropolitan Achievement Test (MAT) are two such instruments. The CTMM was administered

to Classes I, II, and III in October, 1969. The MAT tests were given to Classes I, II, and III in June, 1970. Scores for the CTMM and the MAT for the children who comprise Class IV were a matter of record in the district office and are included in this study.

STATISTICAL METHODOLOGY

In order to determine whether the scores show positive significant differences, it was necessary to analyze all the scores using methods that are designed for this purpose.

The statistical methodology used for the WRAT portion of this study was to apply an analysis of variance for the WRAT gain scores by groups. Then, to use Scheffe's Method of Multiple Comparisons to contrast Class I (DISTAR) with the average of Classes II and III (PKR). For the MAT portion of this study an analysis of co-variance was applied using WRAT-adjusted mean scores by groups. Then, Scheffe's Method of Multiple Comparison was used to Contrast Class I (DISTAR) with the average of Classes II and III (PKR).

A t-Test for independent means was used to compare MAT mean scores between Class I (DISTAR) and Class IV (Ma hed Control).

V. HYPOTHESES

DISTAR Reading Program will compare favorably with the PKR Program for first-grade children of high ability in reading, but DISTAR will be measurably better for children of middle and low ability in reading.

I. There will be no significant difference between WRAT mean gain scores for Class I (DISTAR) as compared to the average for Classes II and III (PKR) in the high-ability reading groups.

II. Class I (DISTAR) will show a positive significant difference in terms of WRAT mean gain scores as compared to the average for Classes II and III (PKR) in both the middle and low-ability reading groups.

III. There will be no significant difference between the MAT scores (adjusted for October WRAT difference by means of co-variance techniques) for Class I (DISTAR) as compared to the average for Classes II and III (PKR) in the high-ability reading groups.

IV. Class I (DISTAR) will show a positive significant difference in terms of adjusted MAT scores as compared to the average for Classes II and III (PKR) in both the middle and low-ability reading groups.

V. Class I (DISTAR) will show a significant improvement in terms of MAT scores as compared to Class IV (The Matched Control "Class").

VI. RESULTS

By means of analysis of variance using the method of unweighted means on the Fall WRAT scores, it was found that there were no significant differences between the three classes in reading ability for each group. (See Table 1.)

The difference between the classes within reading groups is not significant and for that reason the classes were considered to be evenly matched.

TABLE 1

TABLE OF MEANS FOR CLASSES BY GROUPS

	High	Middle	Low
Class I	46.50	27.70	21.90
Class II	42.33	24.87	22.16
Class III	40.83	29.40	22.40

The final WRAT figures for DISTAR were 53.5; for Class II, 53.6; and for Class III, 52.5. The closeness of these figures indicates a ceiling. When test scores are initially high there is less room for gain before the ceiling is reached than when scores are initially low. In the initial WRAT figures for the DISTAR group were 46.5, while the figures for the other two classes was 42.33 and 40.83, allowing for greater gain

scores for the two classes. It was easier to make greater gains when the scores started out lower. This condition in statistical analysis is referred to as "the ceiling effect". (See Tables 1 and 2.)

TABLE 2

ANALYSIS OF GAIN SCORES BY GROUPS

High-Ability Reading Group

Table of Means

	Mean	S.D.	N
Class I	7.00	5.94	4.
Class II	11.33	6.47	6.
Class III	11.66	3.44	6.

Analysis of Variance

Source	Degrees of Freedom	Mean Squares	Sum of Squares	F. Ratio	Probability
Between Classes	2.00	30.54	61.08	1.05	N.S.
Within Groups	13.00	28.82	374.66		

There are no significant differences in WRAT gain scores among the classes at the high-ability reading group. This supports the author's hypothesis.

TABLE 2--Continued

Middle-Ability Reading Groups

Table of Means

	Mean	S.D.	N
Class I	34.10	11.92	10.
Class II	19.25	7.51	8.
Class III	29.00	6.20	5.

Analysis of Variance

Source	Degrees of Freedom	Mean Squares	Sum of Squares	F. Ratio	Probability
Between Classes	2.00	494.45	988.90	5.40	< 5%
Within Groups	20.00	91.52	1830.40		

There are positive significant differences (5% level) in WRAT gain scores among the classes at the middle-ability reading group. This supports the author's hypothesis that the DISTAR Reading Program would result in higher WRAT gain scores with middle-ability reading groups.

TABLE 2--Continued

Low-Ability Reading Groups

Table of Means

	Mean	S.D.	N
Class I	33.20	5.92	10.
Class II	16.50	7.34	6.
Class III	23.70	8.94	10.

Analysis of Variance

Source	Degrees of Freedom	Mean Squares	Sum of Squares	F. Ratio	Probability
Between Classes	2.00	555.16	1110.33	9.78	< 1%
Within Groups	23.00	56.74	1305.20		

There are positive significant differences (<1% level) in WRAT gain scores among the classes at the low-ability reading group. This again supports the author's hypothesis that DISTAR would show greater gains over the PKR classes with low-ability children.

It was decided to do Multiple Comparisons after the analysis of variance in order to compare the DISTAR Class to the average of the PKR classes.

TABLE 3

SCHEFFEE'S METHOD OF MULTIPLE COMPARISONS
FOR WRAT-GAIN SCORES

Groups	$\hat{\psi}$	$\hat{\sigma}_{\hat{\psi}}$	$\hat{\psi}/\hat{\sigma}_{\hat{\psi}}$	Critical Value Needed for 5% sig.	Significance
High	4.5	3.10	1.45	2.76	N.S.
Middle	9.97	4.07	2.45	2.64	N.S.
Low	13.10	3.08	4.25	2.62	Sign. 5%

Where X = Class I gain - $\frac{\text{Class II gain + Class III gain}}{2}$

and is the estimate of the standard deviation of x.

For the high-ability reading group the WRAT gain score data supports the hypothesis that there will be no significant difference. In the middle-ability reading group, however, the gain of Class I (DISTAR) as compared to Classes II and III (PKR) fell just short of significance and the hypothesis of significant difference was not supported. In the low-ability reading group the hypothesis of better results with the DISTAR program was supported by a positive difference significant at the 5% level.

TABLE 4

ANALYSIS OF CO-VARIANCE OF METROPOLITAN ACHIEVEMENT TOTAL SCORES BY GROUPS

High-Ability Reading Groups

	Mean MAT Total	Adjusted Mean Based on Initial WRAT Scores
Class I (DISTAR)	114.00	112.99
Class II	109.50	109.57
Class III	112.33	112.77

F. RATIO Based on Adjusted Means = 1.63 (N.S.)

There were no significant differences in terms of adjusted MAT scores among the classes at the high-ability reading groups.

Middle-Ability Reading Groups

	Mean MAT Total	Adjusted Mean Based on Initial WRAT Scores
Class I (DISTAR)	109.20	108.79
Class II	84.13	85.59
Class III	99.20	97.67

F. RATIO Based on Adjusted Means = 7.24 (sig. at <1%)

There are positive significant differences (<1% level) in adjusted MAT scores among the classes at the middle-ability reading groups, which supports the hypothesis that the DISTAR group would produce higher reading achievement.

TABLE 4--Continued

Low-Ability Reading Groups

	Mean MAT Total	Adjusted Mean Based on Initial WRAT Scores
Class I (DISTAR)	84.60	84.94
Class II	49.17	49.15
Class III	71.90	71.57

F. RATIO Based on Adjusted Means = 9.07 (sig. < 1%)

There are positive significant differences (<1% level) in adjusted MAT scores among the classes at the low-ability reading groups. This supports the hypothesis that the DISTAR group would show greater reading achievement.

TABLE 5

SCHEFFES METHOD OF MULTIPLE COMPARISON
FOR ADJUSTED MAT SCORES

Groups	$\hat{\psi}$	$\hat{\sigma}_{\hat{\psi}}$	$\hat{\psi}/\hat{\sigma}_{\hat{\psi}}$	Critical Value	Significance
High	1.82	1.57	1.16	2.71	N.S.
Middle	17.16	5.20	3.30	2.64	Sign. 5%
Low	24.59	6.64	3.70	2.62	Sign. 5%

These data support all of the adjusted MAT score hypotheses. For the high-ability reading group there was no significant difference. For the middle and low-ability reading groups the data shows a positive significance level of 5%. The hypothesis that the DISTAR group would show greater reading achievement is upheld.

TABLE 6

t-TEST WITH MAT SCORES OF DISTAR CLASS
AND CLASS IV (MATCHED CONTROL)

Degrees of Freedom	Mean Difference	Standard Deviation of Difference	Standard Error of Mean Difference	t	Probability
22	+9.86	27.29	5.69	1.73	< 5%

The t-Test data is positively significant (<5% level). It supports the hypothesis that Class I (DISTAR) children would

show significant improvement in terms of MAT scores as compared to "Class" IV (Matched Control "Class") in reading achievement.

VII. DISCUSSION

The importance of proficiency in reading is a view held in common by educators, administrators, government officials, researchers, and teachers. Teachers seek to teach all children in their classes to read but there are always those children for whom learning to read is especially difficult. Many fail to learn, are retained in first grade, and/or require special classes and remedial help. This author feels that the DISTAR Reading Program would meet the needs of these children. My commitment to try out the DISTAR Program resulted from my attendance at a summer workship, which covered the basic philosophy of the DISTAR Reading Program, its history and development, and actual demonstration and participation with local children. At this time two things were particularly impressive to me: (1) the sincere and determined effort on the part of the writers of DISTAR to develop a program which would really help the children learn, and (2) the evidence of a change in the children's self-concept which was brought about by the daily successes resulting from the applied philosophy stressing the use of praise as one of its teaching techniques.

For these two reasons I felt that concrete empirical data might help to substantiate the value of the DISTAR Reading Program for use in Champaign Unit IV schools. I now feel that the above research has firmly substantiated this feeling.

As teachers review the research about why children fail to learn to read, they discover particular needs of disadvantaged learners (Havinghurst [1970], Williams [1970], etc.). The researchers suggest that good intentions are not enough, that we must seek an effective instrument to enable the children to find reading success in school. My research shows that DISTAR can be that instrument.

As I started on this, I was seeking a program which could be used for children of various reading abilities. This program is not designed specifically for bright students, but for those children for whom learning to read is a very difficult task.

Examination of the above data indicates that the children in the high-ability reading group were not handicapped by a reading program initially formulated for the problem learner. (See Table 2) The high-ability children continued to gain in reading skills and were doing independent reading before and after completion of Part II of the DISTAR. Their continued gain is represented in the Metropolitan Achievement test data. (See Table 4, 5, and 6)

The identification of the children in this group was determined by the ease and skill with which they had progressed with the DISTAR Reading Program. Since this group was reading well at the beginning of the first-grade, they were used as teacher-aides on a one-to-one basis, with the less skillful readers given the opportunity to read to them. This one-to-one reading technique was so well received by all the children

that it was expanded to all the groups. Sometimes the pupil would choose his teacher, and sometimes the teacher would choose his pupil. The children then selected their favorite corner or cubbyhole for their "read-to-each-other" session. The better readers also read activity cards used for enrichment in all subject areas to any children who needed help. Since no adult aides were available for this class until March, the help provided by these children was also very valuable to the teacher. The children serving as teacher-aides were excellent models, quick to employ the praise and correctional techniques they had observed used by the adult teacher.

The DISTAR Reading Program was very helpful for the children of the middle-ability reading group. The gains of this group are indicated by a positive significant difference at the 5% probability level (See Table 2, 4, 5, and 6). Children of this group were able to read many books from the library by Thanksgiving, and enjoyed participating as teacher-aides in the "read-to-each-other" projects. One of the favorite activities carried on during the indoor recess break was "playing school" in the reading corner. The children were able to read "teacher's directions", turn the pages in the spiral-bound teaching books, and in general, imitate the reinforcing behavior of the teacher. This was helpful for all concerned, and an activity which seemed to delight the children.

Findings of this study show that the DISTAR Reading Program was even more helpful for the children in the low-ability reading group (See Table 2, 4, 5, and 6). Since it is

specifically designed to aid this type of learner, it was, therefore, expected to be successful, and these expectations were fully realized. The large significant difference at the 1% probability level make this very clear. These children who might have been expected to fail in the first grade or at least to have been frustrated day after day by other programs too advanced for their reading needs and levels of readiness. The DISTAR Reading Program, in a step-by-step method, teaches these children the skills that often are already a part of the knowledge of the more mature learner, but skills definitely necessary if a child is to learn to read.

The children in Class I (DISTAR) did not require reading help outside the classroom, but suceeded with the DISTAR Reading Program as provided. These children progressed from simple stories to more difficult ones, and on into reading the books which were part of the classroom library. In fact, at the conclusion of a field trip to the Champaign Public Library, a child with borderline learning difficulties decided for himself to read to his teacher his personally selected book, while the other children played in the park nearby.

The results of the study substantiate my hypotheses that the DISTAR Reading Program would be extremely helpful for the children of middle and low-ability reading groups. I feel there are several explanations of these results.

One reason DISTAR is successful is that it incorporates into its design sound educational techniques which are not employed in other programs. A review of the current literature

brought many ideas to mind, which I see reflected in the DISTAR Program. The following are examples of those studies, reports, and research that give evidence of some of this design:

> Ausubel (1968) and Feilelson (1968) discuss sequentially organized, structured material and the slow sequential organization of symbols with sufficient exercise for absorption.
>
> Cohen (1966) stressed phonics and the linguistic phonic instruction in early beginning reading.
>
> Karraker's (1968) research concern the importance of carefully programmed instruction for similar letters.
>
> Chall's (1967) report deals with the superiority of the "code-emphasis" over the "meaning approach" in the teaching of reading.

All these ideas are incorporated in the DISTAR Reading Program.

In addition to the carefully programmed teaching techniques designed in the DISTAR Reading Program, its philosophy of sequencing to prevent failure, which helps build a positive self-concept, is another area which is basic to it and which adds to its over-all success. The DISTAR philosophy impresses one with its built-in success for the children. They succeed and feel this success every day in many ways. The teacher knows this will be so, and the children sense that they are going to be successful. Rosenthal points out that there are differences in the way we behave toward individuals that are dependent upon how we perceive them. It is important, then, for a teacher to feel that she does truly have an instrument

that will enable the children to succeed. Melby points out the importance of instilling a positive self-concept by forestalling any possible experience of failure. This is particularly important for the disadvantaged child. This is done in DISTAR with well-defined small learning stages, so that each child has many daily successes. The research of Havinghurst (1970) and others support the use of external rewards for disadvantaged children. DISTAR subscribes to this view. However, in a public school classroom consisting of all levels of pupils I used verbal praise, smiles, pats, handshakes, and take-home papers and stories as rewards for working hard. Stories and writing lessons are called "take-homes" and are used in the teaching and as rewards, as well as providing the opportunity for the child to share his schoolwork with his parents on a day to day basis. The teacher, the children, and the parents reflect this successful glow for which I would like to credit the DISTAR philosophy. The importance of parent involvement could well be a paper in itself, and is an area which needs further research. Extant research by Hunt (1969), Chase (1970), and others supports the positive, almost necessary involvement of parents particularly when working with disadvantaged children.

In general the children feel successful--they are learning HOW TO READ! Specifically, certain children might bear further discussion. One boy, almost emotionally disturbed (tantrums in kindergarten), worked very hard and was successful in learning to read. One of the things that I feel was most

helpful for this child was the technique of the teacher first modeling for the child the way to perform the task, whatever it might be. and the child repeating it with me, then by himself. Finally he performs the task without the teacher model. This may seem a small point, but for this child the technique worked, not only in reading out also in playing games, in art, and in all of his other activities. This child needed to be shown exactly how to do something; and then he could learn. He was so proud when he realized he could read the library books in the classroom that reading became his first choice of things to do for pleasure.

A little girl, when asked by the art teacher, "Aren't you happy your teacher taught you to read so that you can read this word. 'collage'?", replied, "She didn't teach us. We learned all by ourselves!" And the boy with two sets of parents. who seemed at times to have his mind on other things, tested so high at the April testing that he was retested twice, both times with the same high results at a grade level placement of 6.1, WRAT. This child who was often highly distracted was able to learn to read very well because of the simplicity of the DISTAR approach. He was overheard by a visitor to say, "School is getting happier and happier all the time."

These few examples point to the fact that the DISTAR philosophy builds a positive self-concept.[17]

The data contained in this report clearly indicates that the DISTAR Reading Program is definitely helpful for children of average and below-average ability in reading. It would

seem to me that kindergarten and first-grade teachers would be more successful in teaching the children to read if DISTAR was used especially with these groups. The report of Erickson and others (1967) shows that the earlier these children received help the greater was the carry-over into o.her grades. Our own district's move to the Dual Kindergarten indicates good judgement on the part of those responsible for that decision. My findings support the validity of that decision.

Can the positive results from this study be expanded to benefit other children in the school system? Could the positive benefits be extended for use by kindergarten, first-grade, and second-grade teachers? The special education teachers are already using the DISTAR. This author sees this as a very constructive educational decision by the school administration and faculty. But isn't there more that can be done? I think so! All kindergarten through grade-two teachers could be given in-service training in the use of DISTAR. The value of in-service training programs have long been highly regarded by educational administrators as sound practice. It seems feasible that DISTAR could be utilized in this manner.[18]

Rauch (1967) and Cruscuolo (1968) maintain the importance of administrative involvement and the necessity of in-service training. Percy V. Williams (1970) goes even further and suggests that teachers be included more in planning for changes, particularly in the area dealing with programs for the disadvantaged.

> "In the past, major decisions on teaching youth have all too frequently been made without consultation with classroom teachers. Since there is apparently some difference of opinion between administrators and teachers in a number of critical areas, and since many existing programs have not been successful with deprived youth, more consideration should be given to new approaches which classroom teachers devise and recommend."

It is also my feeling that in kindergarten through second-grade, teachers should be encouraged to attend summer training sessions in the use of DISTAR techniques. They should also be afforded the opportunity to request the DISTAR materials for at least supplemental use in their classrooms.

Research has much to say in regard to children who learned to read in kindergarten. A study by Sutton (1969) showed that children who received a measure of reading ability in kindergarten had a continuing and increasing reading advantage over their classmates throughout primary grades. In Sutton's study instruction was presented in the second semester or kindergarten for fifteen minutes a day and in no way interrupted the normal kindergarten schedule. The children could participate or not, as they wished, in the informal reading activities. Another study by Shapiro and Willford (1969) determined that when reading is started in kindergarten it results in superior reading and spelling achievement at the end of grade two. Ramsey and Boercker (1967), Beery (1970), and Witty (1969), all state the possibility of fostering productive learning during the early childhood years.[19]

A point made many times in the literature is that the emphasis should be on prevention of reading failure rather than on remediation. DISTAR is sequenced to prevent failure.

Following the line of reasoning that prevention is better than remediation, examination of the studies and reports suggests that one way to prevent failure would be to govern class size in primary reading classes. Furno and Collins (1967) in a five-year study found that pupils in smaller classes made greater gains in reading and arithmetic. A report by Irvin H. Balow (1969) where one-half of the pupils in the first grades arrived at 9:00 and one-half of them arrived at 10:00, with dismissal following a similiar schedule, produced some interesting information. The scheduling provided the teacher with two periods where only half of the children were in attendance at one time. The results add weight to the belief that reading achievement and class size are correlated positively in favor of the smaller class size. DISTAR is designed to be taught in small groups of five to seven (never more than ten and ten is not recommended). I preferred five students working in an atmosphere of undisturbed concentration. Hence activities for the rest of the class needed to be arranged, using aides, parents or teacher-structured choices. (The data in this report was evaluated at three times to give a three-group look at the classroom.) Actually, the teaching was done in five reading groups, to give opportunity for every child to participate many times during a session.

I am confident of the value and workability of the DISTAR Reading Program since my introduction to it in 1967. My confidence has been well validated by this study. This study and the related research referred to in this paper has given the necessary empirical support to the philosophical premises upon which DISTAR is founded and to its instructional make-up. I strongly suggest that the findings of this study be taken into account by the administration of Champaign Unit IV Schools and all other progressive elementary educators.

I am looking forward to the up-coming years. Further research of this type would be of great assistance in educational planning. I plan to use the DISTAR Reading Program for first-grade children. It will be interesting to note the amount of progress the children will make with only one year of the program. In all this I have been impressed with the results of the DISTAR Reading Program in the past, as this study shows, and I am confident of its value for the future.

Carl Rogers in his new book, Freedom to Learn, says:

> "It goes without saying that programmed learning has great potential risks if it is unwisely used. If it becomes a substitute for thinking in larger patterns and gestalts, if it becomes a way of stressing factual knowledge as over against creativity, then real damage may be done. But if it is perceived as an instrument which may be used by educators to achieve flexibility in education, then it is readily evident that it is one of the most powerful tools which psychology has as yet contributed to the field."[20]

FOOTNOTES

[1]Edgar Dale, "The Future of Reading," The Reading Teacher (Dec., 1960), pp. 205-216.

[2]James E. Allen, Jr., "The Right to Read--Target for the 70's," Journal of Reading (Nov., 1969), pp. 95-101.

[3]Ibid., p. 101.

[4]A. Sterl Artley, "Teacher's Skills," Reading Teacher (Dec., 1969), pp. 239-248.

[5]Harold Howe, II, "Educator's Most Crucial Issue" (May, 1966), Paper presented Founder's Day Convocation, Teacher's College, Columbia University, N.Y.C.

[6]J. McVicker Hunt, The Challenge of Incompetence and Poverty (1969), University of Ill. Press, Urbana, Ill., pp. 201-202, 289.

[7]Alexander Frazier, "Curriculum--A Tougher Look at Skills--A Closer Look at Children," Grade Teacher (Jan., 1970), pp. 95-97.

[8]Sherman H. Frey, "Readings in Classroom Learning," American Book Co. (1969), p. 392.

[9]Samuel Weintraub, "Teacher Expectation and Reading Performance," The Reading Teacher (March, 1969), pp. 555-559.

[10]Joan C. Baratz, "Linguistic and Cultural Factors in Teaching to Ghetto Children," Elementary English (Feb., 1969), pp. 199-203.

[11]Jeanne Chall, Learning to Read: The Great Debate, McGraw Hill Book Co., N.Y. (1967), p. 217.

[12]Ibid., p. 308.

[13]Richard Venesky, R. C. Calfee, and R. S. Chapman, "Skills Required for Learning to Read," Education (Vol. 89, April, 1969), pp. 298-300.

[14]Elaine Bruner, A paper presented at McGill University in Canada (1967).

[15]With the exception: That Test data was not available for one child from the high level of Group I.

[16]Upon completion of Part II of the DISTAR Reading Program and following the administering of the January and April WRAT (post-tests) the children in Group I sub-groups: high and middle level, were placed in other reading series and/or individualized reading programs using any materials available to the teacher.

[17]This brief attempt in a few paragraphs to cover the DISTAR techniques and philosophy is inadequate. Hopefully, the reader will investigate it more fully on his own.

[18]There is available a DISTAR Language Program and a DISTAR Math Program especially designed for children with learning difficulties.

[19]For any reader desiring to pursue this line of research the information is contained in the bibliography. The scope of this paper precludes any further discussion of this area.

[20]Carl R. Rogers, Freedom to Learn. Chas. E. Merrill Pub. Co., Columbus, Ohio (1969), p. 141.

I am indebted to: Roger Edwards, University of Illinois doctoral student for his statistical analysis; Lola Stanly, Assistant Curriculum Director, Unit IV Schools, Champaign, Illinois for her help with experimental testing; Dr. Arthur Turner for his cooperation and assistance and, especially, the two first-grade teachers who with their children participated in this experiment.

BIBLIOGRAPHY

Allen, James E. Jr. "The Right to Read--Target for the 70's." Journal of Reading, Vol. 13 (Nov., 1969), 95-101.

Artley. A. Sterl. "Teacher's Skills." Reading Teacher (Dec., 1969). 239-248.

Atkinson, R. C. "Computer-Based Instruction in Initial Reading." Invitational Conference on Testing Problems (1968), 55-66.

Ausubel, P. O. "A Teaching Strategy for Culturally Deprived Pupils: Cognitive and Motivational Considerations." School Review (1963), 71.

Balow, Irving H. "A Longitutional Evaluation of Reading Achievement in Small Classes." Elementary English Vol. 46 (Feb., 1969), Nat'l Council of Teachers of English, Champaign, Illinois, 184-187.

Baratz, Joan C. "Linguistic and Cultural Factors in Teaching to Ghetto Children." Elementary English (Feb., 1969), 199-203.

Beery, Keith E. "Preschool Prediction and Prevention of Learning Disabilities." Dimensions Publication, 68.

Bereiter, Carl and Engelmann, Siegfried. Teaching Disadvantaged Children in the Preschool, Prentice-Hall, New Jersey (1966), 312.

Bereiter, Carl and Engelmann, Siegfried. "Observations on the Use of Direct Instruction With Young Disadvantaged Children." Journal of School Psychology Vol. 4 No. 3 (Spring, 1966).

Bereiter, Carl. "Instructional Planning in Early Compensatory Education." Phi Delta Kappan Vol. 68 No. 7 (March, 1967).

Bloomfield, L. and Barnhart C. Let's Read, A Linguistic Approach. Detroit: Wayne University Press, 1961.

Brochure. Quoting from brochure of Science Research Associated, Inc., Chicago, Illinois, 1969.

Bruner, Elaine. "The Direct Instructional Program for Teaching Reading." (Aug., 1967), Paper presented at and published by The 4th International ITA , McGill University, Montreal, Canada.

California Test of Mental Maturity. Devised by Elizabeth T. Sullivan, L. Willis Clark, and Ernest Tiegs, Published: California Test Bureau, Monterey, California (1963).

Chall, Jeanne. Learning to Read: The Great Debate. McGraw, Hill Book Co. (1967) N.Y., 372.

Cohen, S. Alan. "Some Conclusions About Teaching Reading to Socially Disadvantaged Children and Youth." Paper presented at N.Y. State English Teacher's Council, N.Y. (Apr. 22, 1966), 254-262.

Criscuolo, Nicholas P. "Seven Crucial Issues in Reading." Paper presented at Connecticut Association for Reading Research, 1968.

Dale, Edgar. "The Future of Reading." The Reading Teacher (Dec., 1960), 205-216.

Deutsch, Martin. "The Disadvantaged Child and the Learning Process." An Article in a Book Called Education in Depressed Areas, ed. A. H. Passow, pub. Teacher's College Press, Columbia University, N.Y. (1963).

Dietrich, Dorothy M. "Challenges in Reading." Reading Teacher (Dec., 1969) 260-272.

Durkin, Dolores. "Pre-Reading Skills." Reading Teacher (Dec., 1969), 250-255.

Dykstra, Robert. "Classroom Implications of the First-Grade Reading Studies." Paper presented: College of Reading Association Conference, Knoxville, Tenn. (Apr. 1968).

Edwards, Esther P. "Kindergarten Is Too Late." Saturday Review (June 15, 1968), 68-79.

Engelmann, Siegfried. Teaching the Slow Learner in the Primary Grades. Chicago: Science Research Associates (1969).

Engelmann, Siegfried. "Teaching Reading to Children With Low M.A." University of Illinois, Urbana, Instructional Research for Exceptional Children.

Erickson, Esdel L.; Bonnell, Jane; Hofmann, Louis; and McMillan, Joseph. Final Progress Report to the Office of Economic Opportunity, H.E.W., Washington, D.C. (1969).

Fanning, Robert J. Programmed Instruction Project Annual Reports. Presented at New York City Board of Education, Brooklyn, N.Y. (1964-1965).

Faustman, Marion Neal. "Some Effects of Perception Training in Kindergarten or First Grade Success in Reading." This paper pres: International Reading Association Conference, Seattle, Wash. (May, 1967).

Feitelson, Dina. "Teaching Reading to Culturally Disadvantaged Children." Reading Teacher (Oct. 1968), 55-61.

Frazier, Alexander. "Curriculum--A Tougher Look at Skills--A Closer Look at Children." Grade Teacher (Jan., 1970) 95-97.

Frey, Sherman H. "The Case Against Programmed Instruction." The Clearing House (Sept., 1965).

Fries, C. C. Linguistics and Reading. Holt, Rinehart & Winston, Inc., New York (1963).

Frost, Joe L. Early Childhood Education Rediscovered. Holt, Rinehart & Winston, Inc., New York (1968).

Furno, Orland F. and Collins Geor. J. "Class Size and Pupil Learning." Report from Baltimore Public Schools, Md. (Oct., 1967).

Gates, Arthur I. "Teaching Reading Tomorrow." The Reading Teacher (Dec., 1969) 231-238.

Glass, Gene V. and Stanley, Julian C. Statistical Methods in Education and Psychology, Prentice-Hall, Inc., Englewood Cliffs, New Jersey (1970).

Harris, Albert S. "The Effective Teacher of Reading." The Reading Teacher (Dec., 1969) 195-205.

Havinghurst, Robert. "Curriculum for the Disadvantaged," Journal of Phi Delta Kappan (Mar., 1970) 371-373.

Hayes, Robert B. and Wuest, Richard. "Four Instructional Approaches to Beginning Reading." This paper was presented at the International Reading Association Conference, Boston, Mass. (Apr. 24-27, 1968).

Hechinger, Fred M., ed. "An Academically-Oriented Preschool for Culturally Deprived Children." Preschool Education Today, Garden City, N.Y.: Doubleday & Co. Inc., (1966).

Herber, Harold L. "The State of Reading." This paper was presented at the National Council of Teachers of English Conference, Honolulu (Nov. 23-25, 1967).

Howe, Harold, II. "Educator's Most Crucial Issue." This paper was presented at Founders' Day Convocation, Teacher's College, Columbia University, N.Y.C.

Hoyt. Homer. "Four Paths to Reading." Report presented San Luis Obispo Co., Supt. of Schools, California (1966).

Hunt, J. McVicker. The Challenge of Incompetence and Poverty. University of Ill. Press, Urbana, Illinois (1969).

Karraker, R. J. "Teaching Beginning Readers to Distinguish Between Similiar Letters of the Alphabet." Report Bulletin (Mar., 1968), Missouri University, Kansas City.

Keisler, Evan and McNeil, John. "Oral and Non Oral Methods of Teaching Reading." Education Leadership (May, 1968), Follett Pub. Co., Chicago, Illinois, 761-764.

Melby, Ernest O. "Education and the Disadvantaged." Paper presented at Conference on the Disadvantaged, University of Wisconsin, Milwaukee June 8-9, 1967, (Aug., 1967).

Metropolitan Achievement Test. Harcourt Bruce & World, New York. Walter N. Durost (1962).

Nixon, Richard. Presidential Address to Congress on Education Reform (March, 1970).

Potts, Marion and Savino, Carl. "The Relative Achievement of First Graders Under Three Different Reading Programs." The Journal of Educational Research Vol. 61 (July, 1968), Madison, Wisconsin.

Ramsey, Wallace and Boercker, Marguerite. "The Influence of a Head Start Program on Reading Achievement." This paper presented at the International Reading Association Annual Convention, Seattle, Washington (May, 1967).

Rauch, Sidney J. "Ten Guidelines for Teaching the Disadvantaged." Journal of Reading Vol. 10 (May, 1967).

Rauch, Sidney J. "Reading in the Total School Curriculum." Paper presented at International Reading Association Conference, Seattle, Washington (May, 1967).

Rental, Victor M. "End and Means--Developing Specific Objectives for Reading Instruction." Paper presented at International Reading Association Conference, Seattle, Washington (May, 1967).

Rosenthal, Robert and Jacobson, Lenore. Pygmalion in the Classroom: Teacher Expectation and Pupils Intellectual Development. Holt, Rinehart & Winston (1968)

Samuels, S. Jay. "Attentional Processes in Reading--The Effect of Pictures on the Acquisition of Reading Responses." Paper presented: American Educational Research Association Conference, N.Y. (Feb., 1967).

Shapiro, Bernard and Willford, Robert. Reading Teacher. (Jan., 1969) 307-311.

Smith, Carl B. "Let's Be Practical About Reading." American Education, U.S. Dept. of H.E.W. Publication (Aug., 1969), 31.

Solomon, Benjamin. "A Perspective for Educators on the Racial Issue in Education." Phi Delta Kappan Vol. 47 No. 9 (May, 1966).

Staiger, Ralph C. New Directions in Reading. Bantom Book Co. New York (1967), 245.

Strickland, Ruth G. "A Challenge to Teachers of Reading." Bulletin of the School of Education, Indiana University, Bloomington, Ind (Mar., 1969) 93-110.

Sutton, Marjorie Hunt. "Children Who Learned to Read in Kindergarten." The Reading Teacher (Apr., 1969) 595-602.

Venesky, Richard, Calfee, R. C., and Chapman, R. S. "Skills Required for Learning to Read." Education 89 (Apr., 1969) 298-300.

Weintraub, Samuel. "Teacher Expectation and Reading Performance." The Reading Teacher (Mar., 1969), 555-559.

Wide Range Achievement Test. Guidance Associates, Wilmington, Delaware (1965).

Witty, Paul A. "Studies of Early Learning: Their Nature and Significance." Education 89 (May, 1969).

Williams, Percy V. "Education of Disadvantaged Youth: Teachers vs. Administrators." The Educational Forum (Jan., 1970), 229-234.